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# Results of the 2008 Litter Assessment and the 2008 Georgia Litter Annual Report (FY 2007 and 2008)

Board Development  
Institute

May 7, 2009



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## Thanks to the Litter Team

Association County Commissioners of Georgia	Police Chief Association
Department of Community Affairs	Pulp and Paper Association
Department of Economic Development	Sheriff's Association
Department of Natural Resources	Georgia State Patrol
Department of Public Safety	Georgia Association of Tire Retailers
Department of Transportation	Office of Highway Safety
Georgia Association of Code Enforcement Officers	Hands On Georgia
Georgia Beverage Association	Keep Georgia Beautiful Executive Directors
Georgia Chamber of Commerce	Metropolitan North Georgia Water Planning District
National Solid Waste Management Association	Prosecuting Attorney's Council of Georgia
Georgia Municipal Association	Georgia Garden Club Association

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## Statewide Litter Assessment

- Quantify litter in Georgia
- Characterize litter in Georgia
- Measure changes in litter since 2006
- Evaluate factors associated with litter
- Propose strategies to expand efforts to prevent and abate litter

## Methodology

- Randomly select sites throughout State and assign to one of eight roadway types
- Count number of litter items along 500 foot stretch of road, within three feet of edge of roadway (edge count) and extrapolate to calculate litter per mile
- Identify litter items within 15 feet of edge of roadway along same length (meander count)
- Gather data related to 115 variables in field and from secondary sources about each site
- Use econometric modeling to determine which variables are associated with the amount of litter

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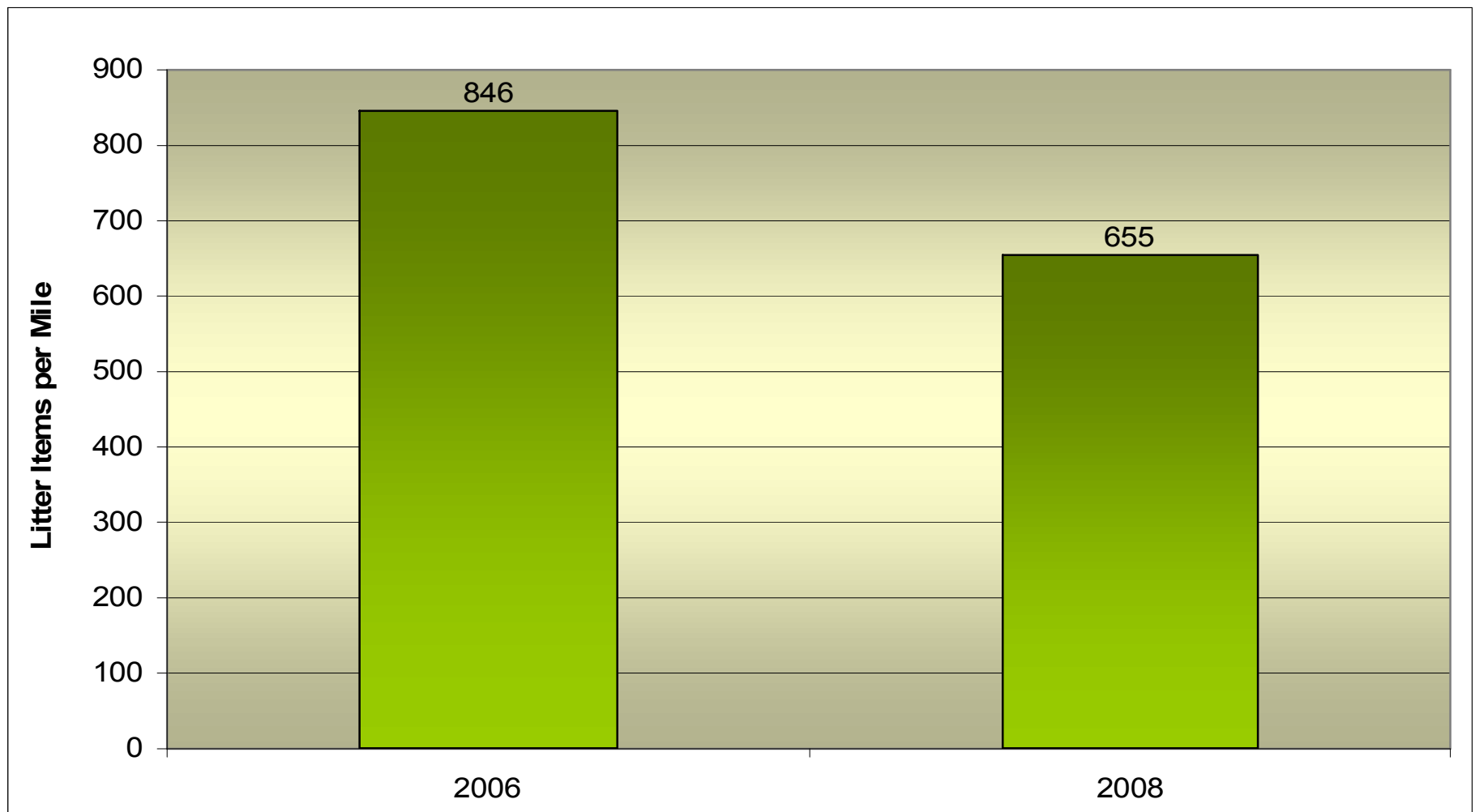
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Roadway Group	Vehicular Traffic – Refuse/Recycling Trucks
Number of Stoppage Opportunities within Sampled Roadway Frontage	Vehicular Traffic – Multi-Occupant Vehicles
Number of Stoppage Opportunities – Stop Signs (1,000 ft)	Roadway Traffic – Pedestrians
Number of Stoppage Opportunities – Traffic Signals (1,000 ft)	Sidewalks (Yes/No)
Number of Public Transportation Hubs (MARTA bus stop, park & ride, etc.) (1,000 ft)	Bike Lanes (Yes/No)
Overhead Street Light(s) present within sampled site (Yes/No)	Roadway is popular alternative/traffic avoidance route
Number of Storm-Water Runoff Basins within site boundaries	Roadway Speed Limit
Adopt-A-Highway Road (Yes/No)	Proximity to Landfill(s)
Toll Road (Yes/No)	Proximity to Transfer Station(s)
Construction – Paving/Lane Closure	Proximity to Recycling Center(s)
Construction – Day or Night	Proximity to Parks/Community Centers
Lane Closure – Workers/Police Present (Yes/No)	Proximity to Public/Private Universities
Lane Closure – Traffic Backed Up (Yes/No)	Proximity to Schools, Elementary
Construction – New Building/Work Zone	Proximity to Schools, Secondary (HS)
Construction – Road Expansion	Proximity to Major Construction Zone
Roadway has a curb (Yes/No)	Proximity to Rest Stop (Rest Area)
Roadway has a maintained roadway shoulder – Gravel	Proximity to day worker pickup location (e.g., employment agency) – 1000 ft
Roadway has a maintained roadway shoulder – Paved	Roadway Leads to Major Tourist Attraction/Area (Yes/No)
Roadway Overpass Directly Intersecting Site	Number of Fast Food Establishments within 1 mile (3 miles)
Vehicular Traffic – Open Bed Trucks	Number of Convenience Stores within 1 mile (3 miles)
Vehicular Traffic – Self Haul Business	Number of Hardware Stores/Self-Storages within 1 mile (3 miles)

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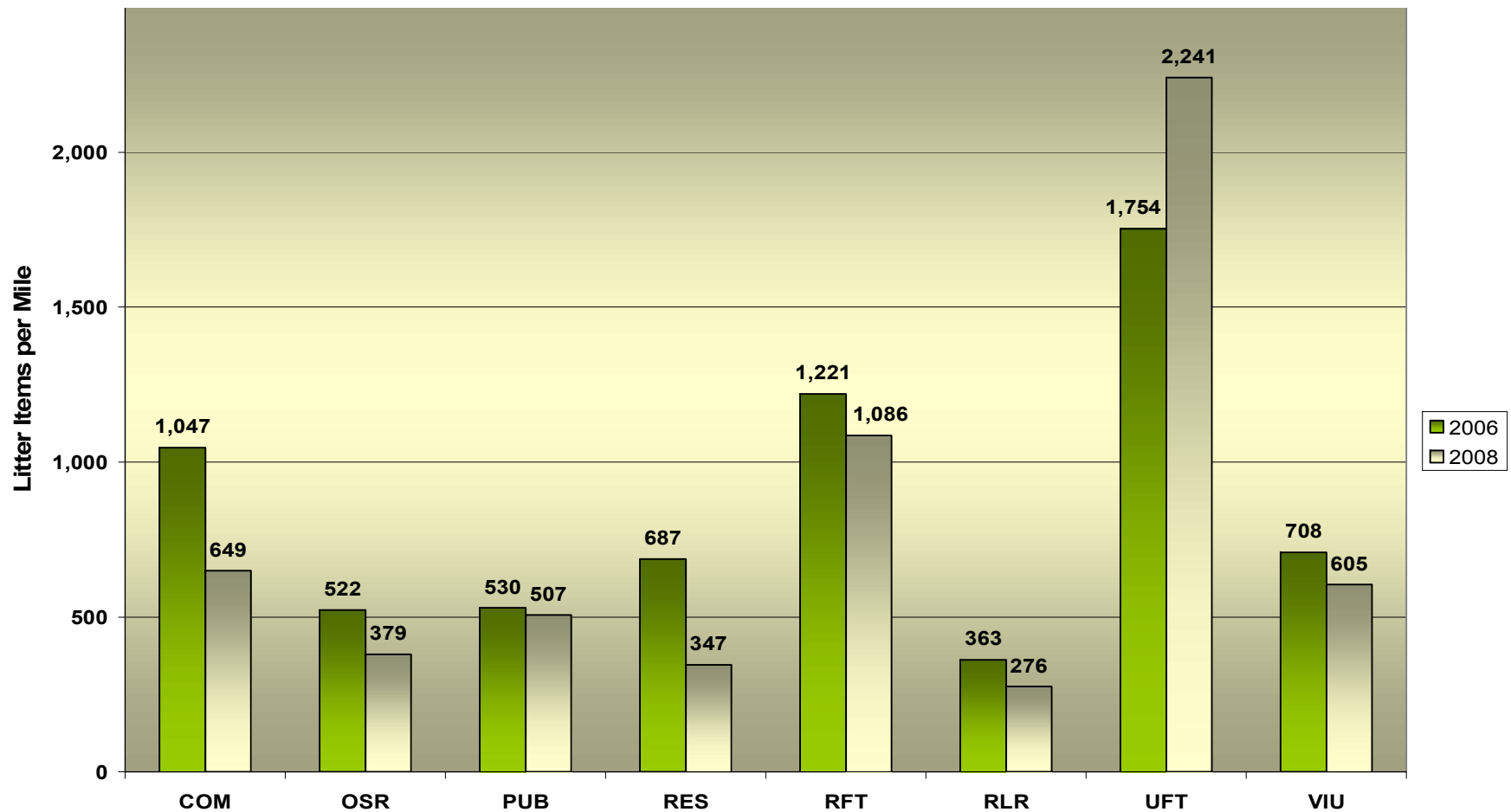
## Measuring Progress



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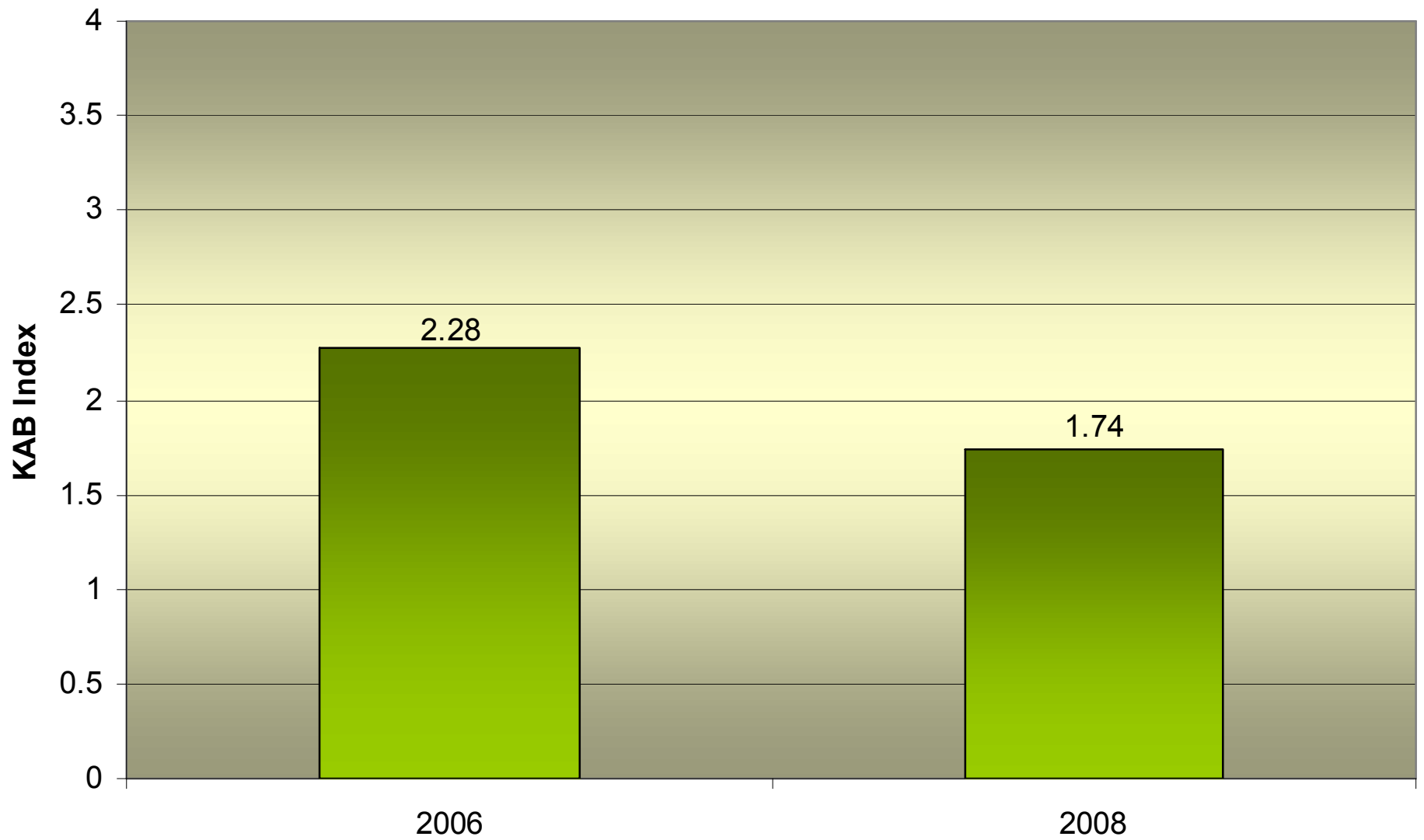
## Measuring Progress



[1] Reflects edge count only.

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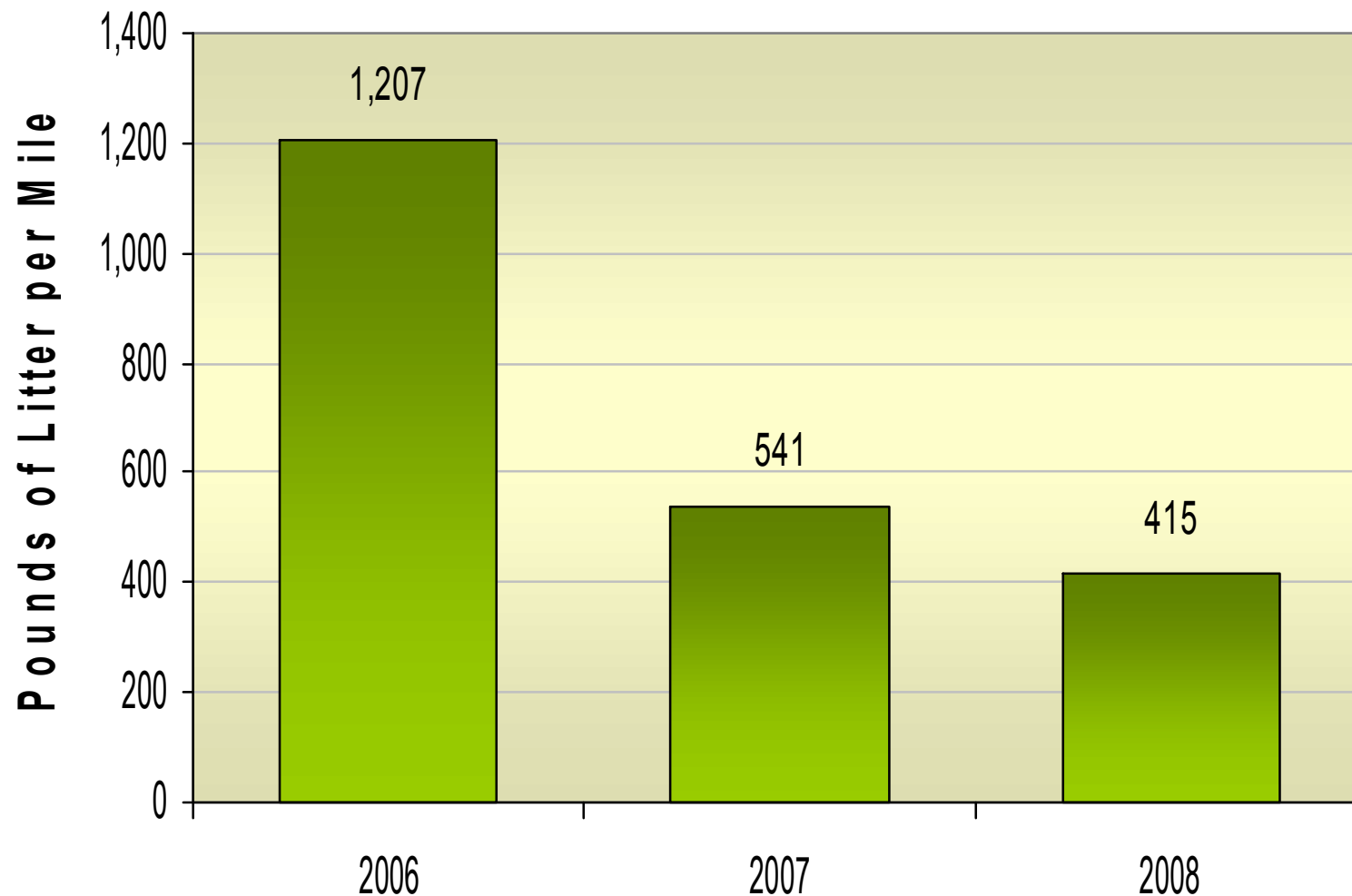




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## Further Confirmation Great American Clean Up Results



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Deliberate	2006	2008
Beer and soft drink containers	3.8%	4.4%
Juice, wine, liquor, water containers	1.1%	1.6%
Bottle caps and seals	1.9%	2.3%
Pull tabs	0.3%	0.1%
Beverage carriers and cartons	0.2%	0.1%
Cups, lids, straws	6.4%	6.6%
Snack food packaging (candy, gum, etc.)	8.7%	11.1%
Take-out food packaging	3.1%	7.1%
Cigarette packs, lighters, matches	2.0%	2.4%
Napkins, bags, tissues	4.7%	6.1%
Toiletries, toys, drugs	0.8%	1.0%
<b>Subtotal - Deliberate</b>	<b>32.9%</b>	<b>42.9%</b>



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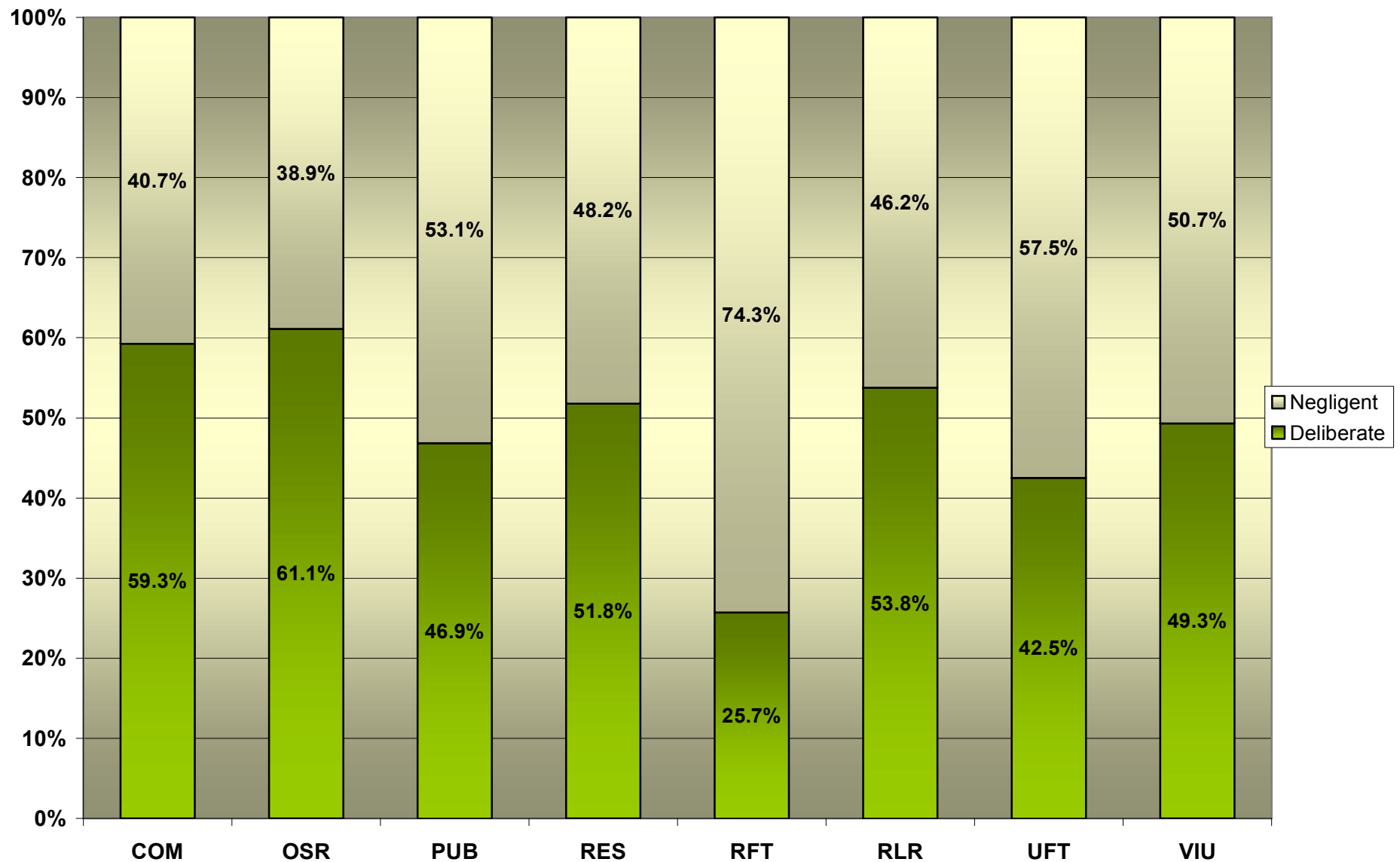
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Negligent	2006	2008
Newspapers, magazines, books	1.4%	2.6%
Advertising signs and cards	0.9%	0.2%
Home food packaging (TV dinners, etc.)	0.2%	0.3%
Vehicle debris and packaging	9.6%	17.1%
Construction and demolition debris	1.4%	6.2%
Miscellaneous paper	19.2%	14.6%
Miscellaneous plastic	21.3%	11.7%
Miscellaneous metal and foil	8.1%	2.9%
Miscellaneous glass and ceramics	1.5%	0.3%
Wood and yard debris	1.6%	0.1%
Other (carpet, fabric)	1.9%	1.0%
<b>Subtotal - Negligent</b>	<b>67.1%</b>	<b>57.1%</b>



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Variables Associated with Total and Negligent Litter per Mile	Association with Total Litter per Mile	Association with Negligent Litter per Mile
Site within one mile of hardware store	230% more	170% more
Recent collection of garbage along roadway	200% more	170% more
Site is located within one of five metro-Atlanta counties	150% more	115% more
Roadway type is urban freeway	150% more	60% more
Housing assistance vouchers (subsidized housing) on roadways	95% more	90% more
Sidewalk along roadway	90% more	100% more
Curb along roadway	80% less	70% less
Speed limit greater than 55 mph	60% more	80% more
With each increase in the category of grass height <sup>1</sup>	24% more	35% more
With each 10% increase in crime rate for the County	2.6% more	2.8% more
For each 10% increase in the number of open-bed vehicles/multi-occupant vehicles passing by	1.9% more	2.0% more
[1] From no grass to grass 0-3 inches high, from 0-3 inches high to 3-6 inches high, or from 3-6 inches high to over 6 inches high.		

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Variables Associated with Total Litter Only	Association with Total Litter per Mile
Billboards within or near site	300% more
Within five miles of tourist attraction	130% more
Anti-littering message within or near site	60% less
Trees along roadway	50% more
Open areas along roadway	50% more

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Variables Associated with Negligent Litter Only	Association with Negligent Litter per Mile
Roadways characterized as residential	34% less
Street lights along roadway	25% less
Number of landfills located in County	20% more
Number of self-haul vehicles traveling along roadway	10% more
Number of fast food restaurants within one mile	10% more

## Areas to Focus

- Urban Freeways and Tollways
  - Highest number of total and negligent litter items per mile
  - The only roadway types where litter increased over the past two years
- Metro-Atlanta Roadways
  - Fulton, Dekalb, Gwinnett, Cobb, and Clayton counties
  - More total and negligent litter items per mile
- Higher Crime Rates/More Subsidized Housing
  - Findings consistent with “broken windows” theory



## Education Strategies

- Target owners, operators, and customers of hardware stores, fast-food restaurants, and tourist attractions
- Target areas with billboards, sidewalks, trees along roadsides, and open areas with anti-littering signage and other education
- Work with billboard companies to post anti-littering messages
- Educate haulers on requirements to clean up any spilled litter and to require customers to set-out litter in secure containers

## Education Strategies (cont')

- Target self-haulers and open-bed vehicle drivers with for anti-littering messages, educating drivers on the responsibility for (and dangers of) materials ejected from their vehicles
- Expand and enhance messages to smokers, emphasizing the role of cigarette butts in litter
- Target people in multi-occupant vehicles, for example families, people carpooling to work or school, or travelers
- Develop unique approaches to changing behavior in high-crime areas, emphasizing the link between litter and more “serious” crimes

## Enforcement Strategies

- Enforcement personnel should focus on:
  - urban freeways
  - all roadway types on metro-Atlanta
  - roadways with speed limits of 55 miles per hour or greater,
  - multi-occupant, self-haul, and open-bed vehicles
- Continue and update enforcement training program based on the results of this assessment and other research
- Promote creative approaches for law enforcement to use to prevent and abate litter
  - distributing “Secure Your Load” brochures to those stopped for a first violation
  - mailing litterers that are not stopped but are seen littering (deliberately or through negligence) a litter bag and information

## Enforcement Strategies (cont')

- Create statewide tracking of citations given for littering, unsecured loads, and other violations as well as the outcome of these cases
- Use existing cameras to look for littering and/or unsecured loads, especially at freeway exits and entrances and exits at disposal facilities
- Enlist landfill staff to ensure that loads are properly covered when vehicles enter and depart the landfill, consider increased landfill fees for violators

## Enforcement Strategies (cont')

- Have state and local litter hotlines fully implemented and staffed so that responses are immediate then promote use
- Consider organized collection systems where currently self-haul or multiple haulers on routes
- Update local ordinances to require haulers to pick up any garbage that spills during collection
- Ensure that set-out requirements that prevent litter are incorporated in their local ordinances, that residents and businesses know what is required, and that warnings and tickets are written for violations

## Eradication – Clean Up

- Use the results of this assessment and the online tool to prioritize sites for clean-ups
- Expand the use of different types of collection equipment, especially alongside urban freeways, in the metro-Atlanta areas, along sidewalks, in tourist areas, near subsidized housing, and in high crime areas

## Eradication – Containers

- Site containers for maximum impact based on results, for example:
  - loading docks of hardware stores
  - rest stops along urban freeways
  - exits to fast food locations so motorists do not have to get out of their car to deposit litter
  - high crime areas
  - pull-out locations
- Use designs proven effective in encouraging use and preventing the dispersal of contained materials
- Ensure that containers are properly maintained (unbroken and emptied when full)
- Distribute free containers/trash bags to residents in low income areas coupled with educational materials regarding litter and waste containerization
- Explore integrated trash receptacle for truck beds
- Continue to provide litter containers for vehicles that accommodate cigarette butts. Distribute where smokers congregate.

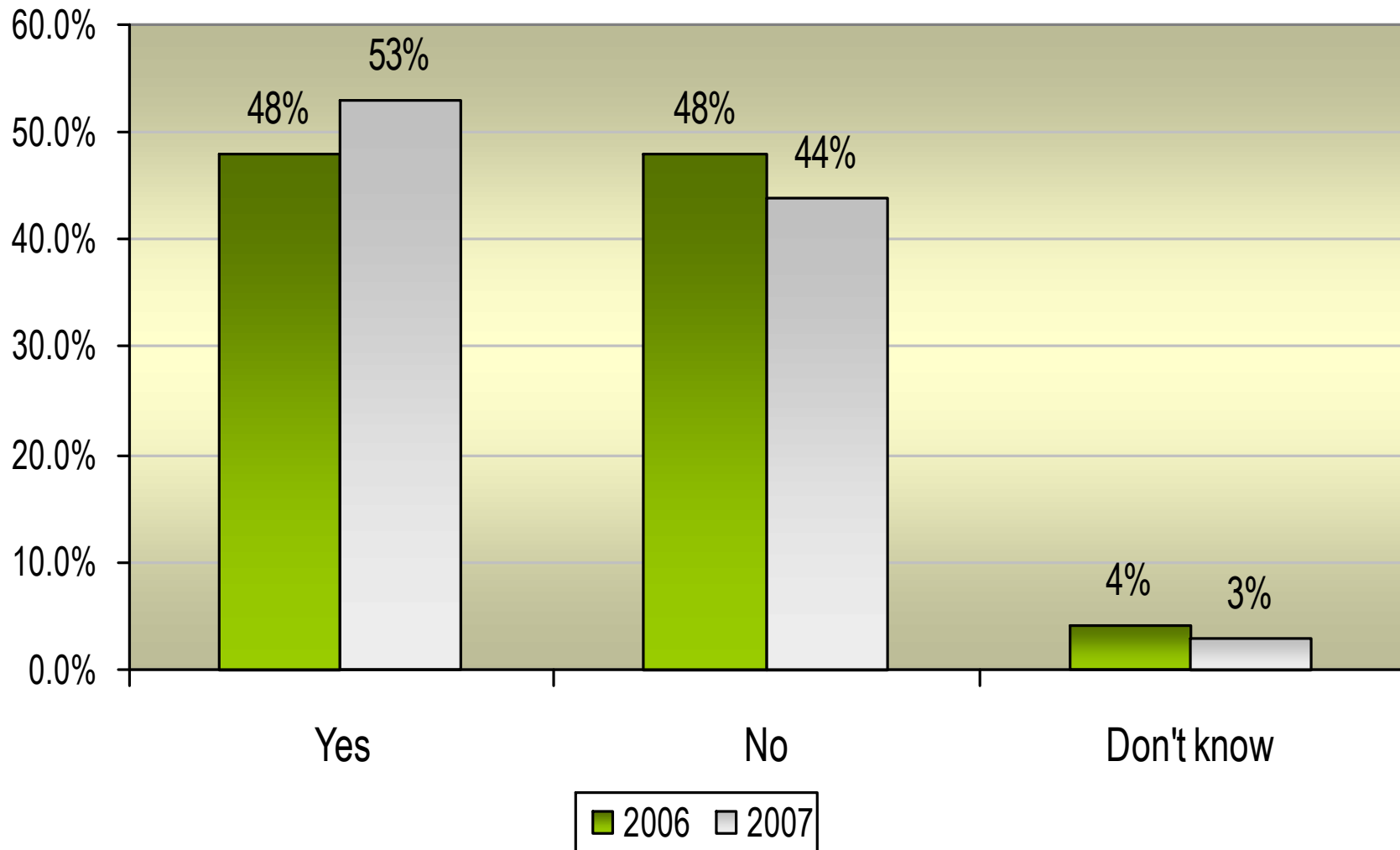
## Eradication - Site Maintenance

- Mow grass on a regular basis, especially on the more urban freeways and metro-Atlanta roadways, ensuring that all litter is picked up first
- Focus anti-littering signs and other strategies proven to be effective on tree-lined roadways and open-areas and maintain in a way that conveys ownership
- Consider adding/maintaining streetlights in areas with none where litter is a problem
- Encourage use trash containers at rest-stops



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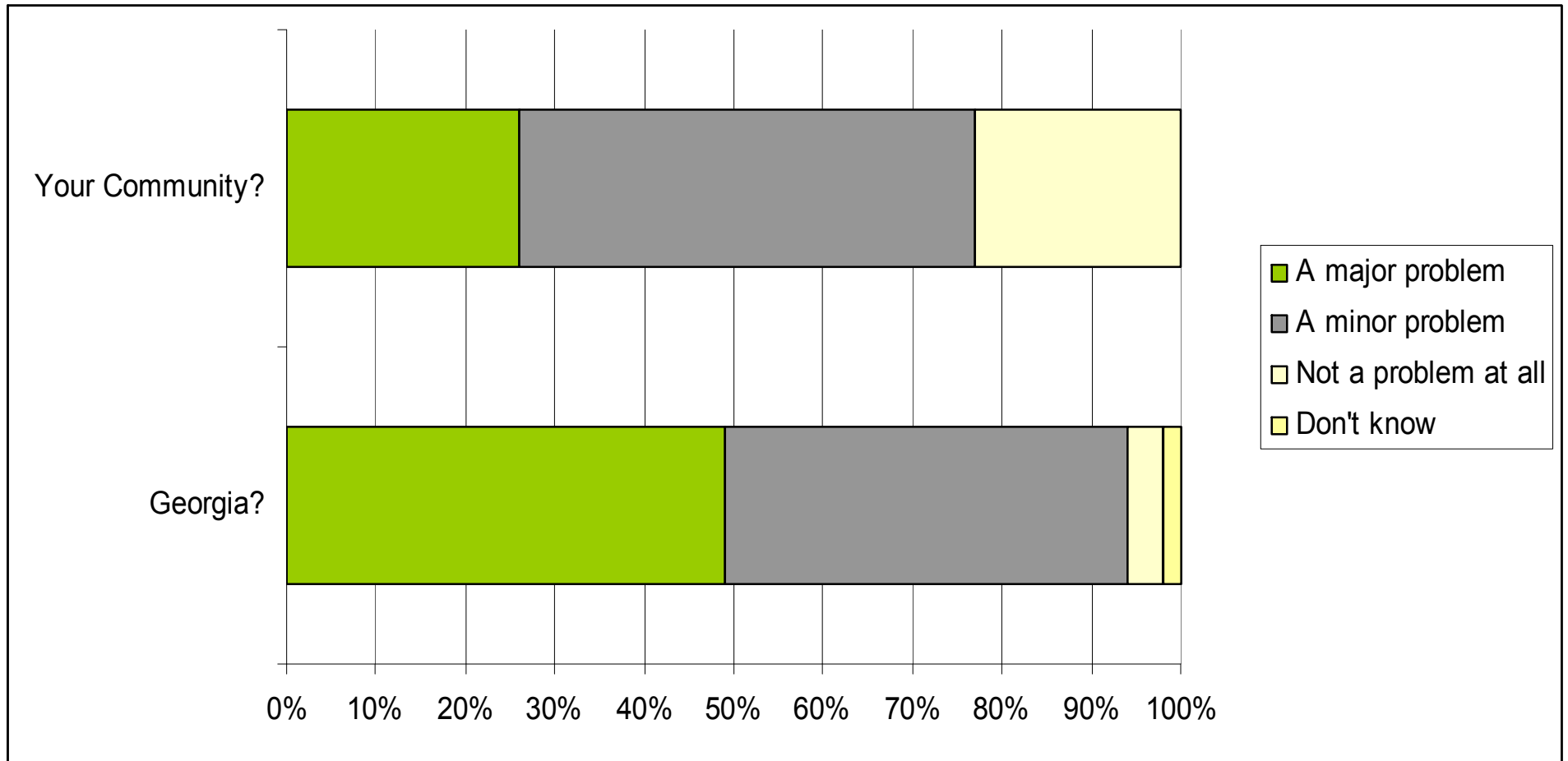


**Litter Attitude Survey -**  
**Have you seen or heard any litter prevention messages in Georgia?**



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In general, would you say litter is a major problem, a minor problem, or not a problem at all?



## Litter It Costs You Campaign

- Started with the Litter Summit - August 29 and 30, 2006
- Gov. Perdue declared that Georgians “are and will be in the attack until we win this war.”
- Nearly 250 attendees received:
  - Litter training information
  - Litter case studies
  - Litter facts
  - Litter assessment and prevention tools
  - Other litter tools and information.

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## The *LITTER. It costs you.* campaign

- Brand
- Mascot
- Website
- Advertisements Tools
- Other Educational Resources

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## Buster the Brown Trasher



- Attended 46 events
- Activity books, stickers and other materials distributed throughout the State

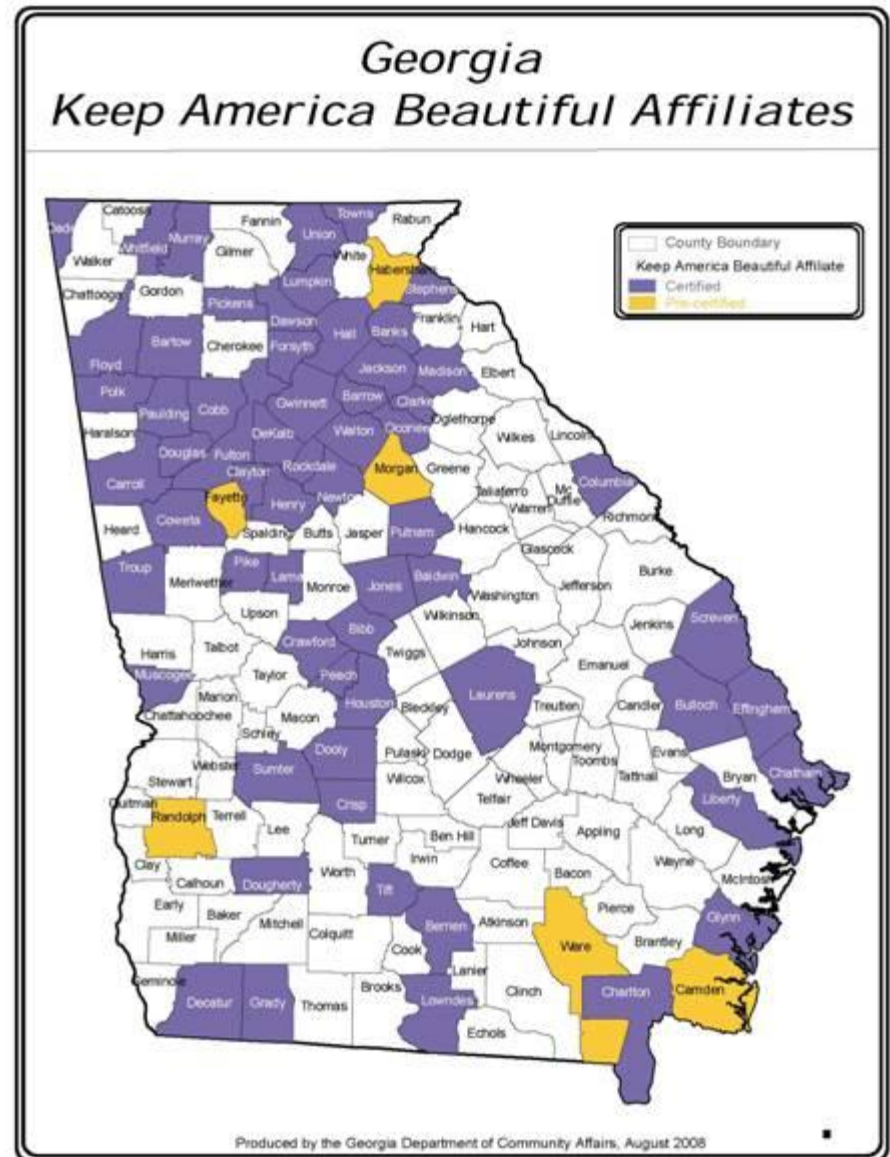
## Website

- For individuals, schools and kids, communities and government, law enforcement, businesses, and media.
- In fiscal year 2008, the *LITTER. It costs you.* website received 16,199 page loads and 11,853 unique visitors.
- Majority of visitors are first time visitors
- In 2009, website will be upgraded and more comprehensive.

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- Curriculum, such as Waste in Place and Clean Sweep, taught to Georgia students about the effects of litter
- Educator Kits with information regarding litter and other environmental programs and resources available to educate the youth of Georgia
- Educate local government and residents, as part of the Guide to Cigarette Litter Prevention developed by KAB, in regards to solutions and tools that they can put to use to reduce cigarette litter in their neighborhoods





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- 100,000 “Secure Your Load” brochures distributed
- Identifies the facts, laws, penalties, and solutions regarding transportation of unsecured loads

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## Partnerships

- Pepsi's delivery trucks in Georgia displayed anti-litter message
- Wild Adventures wrapped trash cans located throughout the park with Georgia's anti-litter message
- [litteritcostsyoud.org](http://litteritcostsyoud.org) website sponsored The Coca Cola Company, Weyerheuser, the Georgia Beverage Association



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## Litter Enforcement

- Thousands  
of Litter  
Violation  
cards  
distributed

## Enforcement

- DCA developed Litter Enforcement Training Program
- Trained more than 500 prosecutors, judges, code enforcement, and local government
- In their 2007 annual survey:
  - 62.4 percent of the local governments responding reported that they have a local ordinance addressing littering
  - 38.9 percent reported that their local government had an environmental code enforcement program and/or officer
  - Local governments reported a total of 33,815 logged complaints related to litter. This is a three-fold increase from the 11,033 reported in 2005.

## Enforcement

- Many local governments did not have the information available to determine how litter and illegal dumping complaints or violations were resolved
- Data suggest that in many places, state and local litter laws are not being enforced
- DNR's Wildlife Resources Division issued 950 litter-related violations in fiscal year 2007, 36 percent of which were egregious litter as defined by the 2006 Litter Prevention and Abatement Act. Funding for this effort was supported by the Solid Waste Trust Fund which was not allocated for future fiscal years
- Most other enforcement agencies do not keep data specifically identifying litter violations

## Eradication – Georgia DOT

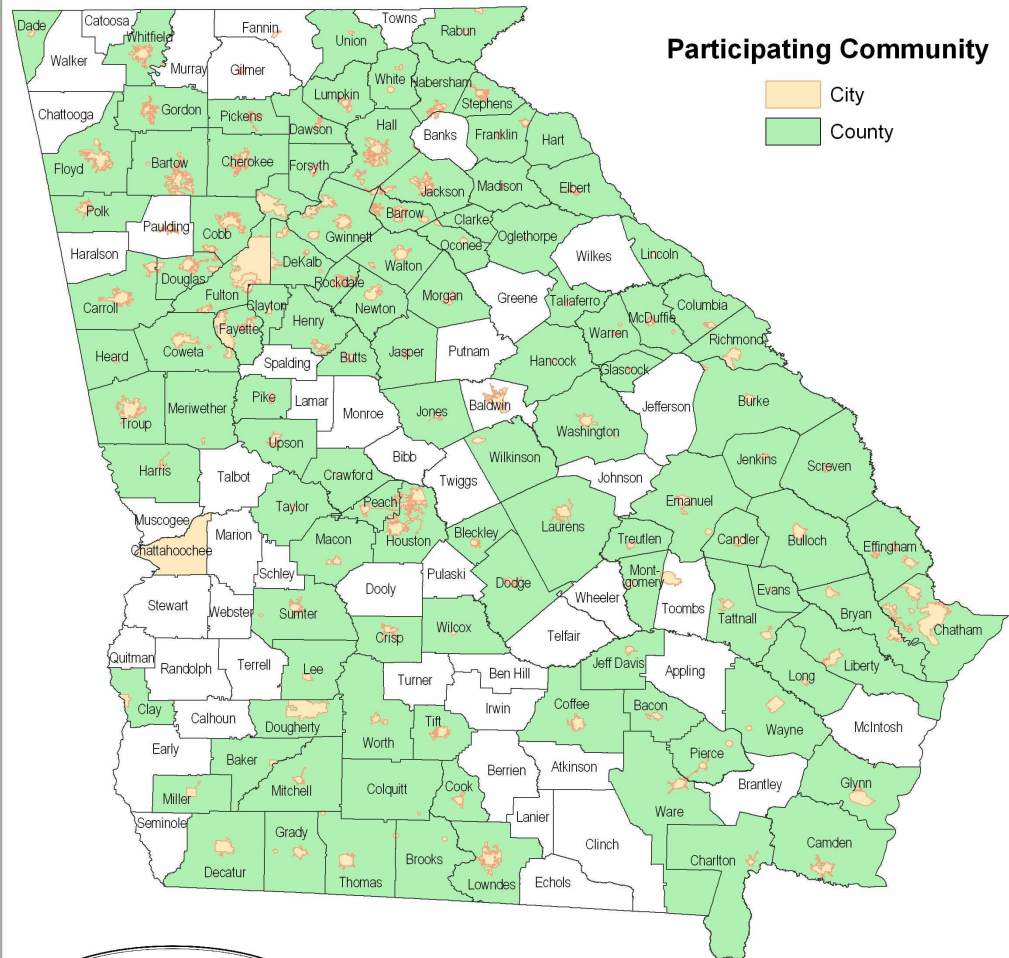
- 150 DOT routine maintenance crews, 49 prison crews, 3,000 weekend probationers and around 400 volunteer Adopt-A-Highway organizations regularly pick up litter
- Georgia DOT annually:
  - removes litter from 1,245 interstate miles and 18,000 state route miles
  - spends an estimated \$15 million per year cleaning up litter

# Great American Cleanup 2008



## Participating Community

- City
- County



Map prepared by Georgia Department of Community Affairs, 2008



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## Great American Clean-Up

Category	2006	2007	2008	Total
Count of Communities	277	567	431	1,275
Count of Volunteers	50,853	65,438	57,831	174,122
Count of Volunteer Hours	247,269	203,426	308,491	759,185
Count of Illegal Dumps	298	263	234	795
Lbs. of Trash	4,007,012	2,523,825	1,913,298	8,444,135
Miles of Road Cleaned	3,320	4,661	4,613	12,594
Lbs. of Trash/ Mile of Road Cleaned	1,207	541	415	NA



## Other Eradication Efforts

- In 2007, over 25,000 Rivers Alive volunteers removed over 700,000 pounds of garbage
- Adopt-A-Highway volunteers spent over 19,000 hours cleaning 645 miles of roadway in 2007 and 2008, filling an average of 30.2 bags per mile in 2007 and 28.8 bags per mile in 2008
- Adopt-A-Stream has over 300 groups comprised of thousands of volunteers that engage in waterway monitoring and cleanup activities

## State Expenditures

Department	FY 2007	FY 2008
Georgia Department of Community Affairs	\$753,455	\$348,249
Georgia Department of Transportation	\$14,961,797	\$15,215,960
Georgia Department of Natural Resources	\$278,640	\$111,481
<b>Total</b>	<b>\$15,993,892</b>	<b>\$15,675,690</b>

- Local governments in the State are estimated to spend an equivalent amount, totaling over \$30 million per year

## Recommendations

- Revive the Statewide *LITTER. It Costs You.* Campaign with a Dual Focus on Negligent and Deliberate Sources of Litter
- Reconcile the Discrepancy Between Public and Public Official Perception of Litter as a Problem
- Register More Local Governments in the Clean Community Challenge
- Provide Resources and Incentives for a Diversity of Partners to Embrace the Statewide Communications Campaign
- Develop a Statewide Litter Strategy Based on Quantitative Goals